

CLAIMS

[1] An electromagnetic fuel injection valve including a valve assembly (20) in which a fixed core (28) is connectingly provided at a rear end of a valve housing (8) having a valve seat (13) in a front end part thereof, and a valve element (19) having a valve part (19a) capable of being seated on the valve seat (13) and a valve shaft part (19b) connecting to the valve part (19a) and a movable core (18) opposed to the fixed core (28) are integrally connected to each other, the valve assembly (20) being contained in the valve housing (8) by being urged by spring to the side on which the valve part (19a) is seated on the valve seat (13), a first journal part (21) close to the valve seat (13) and a second journal part (22) separated from the first journal part (21) to the rear side in the axial direction being provided in the valve assembly (20) so as to be slidably supported by guide holes (14, 15) provided in the valve housing (8), characterized in that the outside surface of the first journal part (21) is formed by a sliding surface (45) slidable on the inside surface of the guide hole (14) and a pair of tapered tilt surfaces (46, 47) connecting to both the front and rear sides of the sliding surface (45); at least the tilt surface (47) on the movable core (18) side, of the both tilt surfaces (46, 47), is formed of a first tilt surface part (47a) connecting to an end part of the sliding surface (45) provided along the axis line of the valve shaft part (19b) and a second tilt surface part (47b) connecting to the first tilt surface part (47a); and an angle

that the first tilt surface part (47a) makes with a plane perpendicular to the axis line of the valve shaft part (19b) is set larger than an angle that the second tilt surface part (47b) makes with said plane.

5 [2] The electromagnetic fuel injection valve according to claim 1, wherein the sliding surface (45) of the first journal part (21) is formed so that the length thereof in the direction along the axis line of the valve housing (8) is 0.2 to 0.3mm.

[3] The electromagnetic fuel injection valve according to
10 claim 1, wherein the valve part (19a) seated on the valve seat (13) which is tapered is formed in a semispherical shape along an imaginary spherical surface (S), and the first journal part (21) having the sliding surface (45) slidable in the guide hole (14) in the valve housing (8) is provided in the valve
15 shaft part (19b) so that a plane (P) passing through the spherical surface center (C) of the valve part (19a) and perpendicularly to the axis line of the valve shaft part (19b) is located within the width of the sliding surface (45).

[4] The electromagnetic fuel injection valve according to
20 claim 3, wherein the radius of the sliding surface (45) is set smaller than the radius of the imaginary spherical surface (S).

[5] The electromagnetic fuel injection valve according to claim 3 or 4, wherein the diameter of the valve shaft part
25 (19b) is set smaller than the seal diameter at the time when the valve part (19a) is seated on the valve seat (13); at a plurality of places in the circumferential direction of the

sliding surface (45) having a larger diameter than that of the seal, a chamfered part (45a) for allowing fuel to flow is formed; and the valve assembly (20) is provided with a fuel passage (25) having at least a longitudinal hole (23) having
5 a rear end thereof opened and a front end thereof closed and extending coaxially with the valve shaft part (19b), and a transverse hole (24b) leading to the longitudinal hole (23) at the rear from the first journal part (21).